GENUS and SPECIES.	Formation.	Locality.
Tetragonolepis confluens ...	Lias	Lyme.
—— dorsalis	Do.	Gloucestersh.
—— heteroderma............	Do.	Lyme.
—— Leachii................	Do.	Ib.
—— leiosomus..............	Do.	Ib.
—— monilifer	Do.	Barrow.
—— ovalis	Do.	Whitby.
—— pholidotus	Do.	Lyme.
—— pustulatus	Do.	Ib.
—— radiatus	Do.	Ib.
—— speciosus	Do.	Ib.
—— striolatus	Do.	Barrow.
Tetrapterus priscus	London clay......	Sheppy.
Thrissops formosus	Green sand	Kelheim.
—— salmoneus	Oolite	Solenhofen.
Thyellina prisca	Lias	Lyme.
Tinca furcata	Tertiary beds ...	Œningen.
Vomer longispinus	Eocene...........	Monte Bolca.
Zygæna dubia	Molasse	Soleure.
New genus	Eocene...........	Monte Bolca.
N. S.	Chalk	Kent.
N. S.	Tertiary beds ...	Aix.
N. S.	Black schist ...	Greenland.
N. S.	Eocene...........	Monte Bolca.

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THERE are perhaps very few persons who are not sensibly alive to the objects of study which Natural History presents, and yet the proportion of those who pursue any department of it as a science is but small. We may probably find an explanation of this circumstance in the operation of two causes. In the first place, the scientific pursuit of zoology or botany cannot be so profitably applied to the arts by which wealth is accumulated as many other departments of science, amongst which we may mention chemistry and the various branches of natural philosophy. Men of science must live as well as other people; and it is the lot of a few only to be able to pursue science independently of their means of subsistence.

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We are, however, differently situated in this country. The changes that may be judged by a few to be desirable cannot be enforced on the many without suspicion of interest; and the prejudices of the few often oppose the enlightened demands of the many. In this state of things all that can be done is to wait patiently till the time come when the advantage and propriety of some change will be recognised by all. In the mean time, we think those naturalists do well who take every opportunity of enforcing on the attention of the public the importance of cultivating a taste for Natural History; and we feel much satisfaction that Mr. Patterson of Belfast has appeared as a labourer in this field, well known as this gentleman is to many of our readers as a popular writer on Natural History, and as an active and efficient member of the Natural History Section of the British Association. The pamphlet before us is an address delivered before the Natural History Society of Belfast, and was printed at the request and expense of the Society.

At the commencement our author meets the humiliating question *cui bono*, which we are so often obliged to hear from quarters where we might least expect it.

> "What, it may be asked, is the use of Natural History? And by the word *use*, in such a question, is understood—In what way will Natural History increase a man's profit, protect him from loss, or augment his personal comfort? I pause not here to consider whether or not the question of *cui bono* is not at the present time put too frequently and too pertinaciously; whether we do not sometimes leave the higher regions of science uninvestigated, while we try to wring some practical application out of a partially-revealed truth. The desire of testing the utility of every pursuit by some speedy and profitable result prevails so universally, that it might perhaps be needful to show, that, even on this ground, the study of Natural History is deserving of attention.
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The whole subject is arranged under four heads :—

1. Effects of the study of Natural History on the mental faculties. We quote the following very just observations which the author makes upon this part of his subject :—

> " The study of Natural History, though suitable for manhood, is highly attractive to youth; and bends itself, with easy adaptation, to the varying intellectual capacities of its votaries. To the very young—to children only four or five years old, its objects are perhaps among the most pleasing that can be presented to their notice. At that age, when the observant faculties are in constant action, and the reasoning powers are as yet immature, the flowers, the shells, the birds or quadrupeds, by which the child is surrounded, form naturally the primary subjects of his admiration and inquiry. Those who have had any experience in the management of children will testify with what delight they listen to stories about such things, when the narrator possesses the art of making himself intelligible to the capacity of his auditors. How frequently is he again and again asked for the recital, while each repetition serves only to enhance its charms! Should the teacher be collecting flowers in spring, or gathering the shells which are scattered over the strand, he will find in children his most delighted and zealous assistants, and will mark with what facility they can be taught to discriminate the several kinds, and to recollect the names of those which are the most attractive. And if the same individual—whether a parent or a teacher—be speaking on the subject to the same children some weeks afterwards, he will find, as I have often done, that the facts of which he knew they had been cognisant, were, in truth, but a small portion of those actually observed, and that a whole host of concomitant circumstances, and vivid, though sometimes fantastic associations, had been connected, by the children, with the visible objects to which he had supposed their entire attention had been directed. From such facts it may be fairly inferred, that *Natural History is a study peculiarly well adapted for early youth.*
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> " By thus directing the attention to various external objects which are regarded with interest, we learn the very useful habit of ' having our eyes about us.' We have all read in our school-boy days the story of ' Eyes and no eyes;' and we all know the difference which exists among educated people, as to the power of observing what is actually before their view. One sees a part only, and that imperfectly; another, at a glance, takes in everything peculiar to the scene, almost by intuition. That prompt perceptive powers are desirable, and that they, to a great extent, are dependent on cultivation, every one will admit. The objects which Natural History embraces are well adapted to call these powers into action, and train them to promptitude and vigour. Hence I rank among its intellectual effects, the *beneficial influence it exerts on the observant faculties.*
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> " But this influence is not limited to quickness in using our eyes. As we advance a little beyond childhood, it takes in a wider sphere of usefulness. It teaches us to note resemblances among objects; thus enabling us, in some degree, to group them together by their apparent affinities; and it accustoms us also to mark the differences among those which, in many particulars, are alike. On this all classification among external objects must depend: on this must rest the divisions of classes, families, genera, and species, so indispensable to the naturalist. To discover resemblances, to detect differences, are processes totally distinct from the mere power of observing. They are not acts of the perceptive, but of the reflective faculties. They require not merely the exercise of our eyes, but of our powers of comparison and judgment. In other words, *by the study of Natural History we acquire habits of discrimination.*

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"The pupil soon, however, discovers that many of his hastily-formed ideas and rapid generalizations are erroneous. He finds that, to draw his conclusions with any certainty, the observations on which they are founded must be perfectly accurate; and not only accurately made, but accurately expressed, otherwise they will convey false impressions to other minds. *It enforces, therefore, accuracy in every particular.*

"And to make knowledge available, it is needful that its facts be systematically arranged. Without arrangement all is a chaos—'*rudis indigestaque moles.*' With arrangement, knowledge becomes at all times ready for service, and each accession enriches, not encumbers, its possessor. Whether he seek to acquire or to impart information, the student of nature is compelled to be methodical; and if he desire to illustrate any department of study by suitable specimens, they must be arranged before they can be rendered available. *Natural History, therefore, directly promotes the formation of orderly and systematic habits.*

"But, in the next place, it benefits the mind, by vesting with new and increasing interest the objects by which we are surrounded; thus furnishing agreeable trains of thought in the hours of relaxation. Time to the naturalist never appears long. He groans not under the load of ennui by which others, in such circumstances, are occasionally oppressed. He finds active, healthy, cheerful occupation for every moment; and still the thirst for knowledge 'but grows by what it feeds on.' *To stimulate a constant desire for improvement, and to foster a buoyant activity of mind and spirit,* no pursuit is more serviceable than that now under consideration."

Mr. Patterson speaks here as one who has truly felt the ennobling influence of the pursuit of science, independent of the lower motives of gain and ambition which may imperceptibly obtain an influence over the mind, and against which the man of science cannot too carefully watch*.

2. Intellectual pleasures derivable from the study of Natural History. These are not peculiar to Natural History, and must be evident to all who take delight in the exercise and cultivation of the intellect.

3. Moral and devotional effects. Under this head the elevating influence of a study of the works of creation is pointed out and enforced. The author well observes—

"But the mental effect is not limited to the production of a transient emotion of pleasure: it is the prelude of a long train of thought, and of the most grateful and reverential feeling towards the Great First Cause. The structural arrangements, admirable as they are, should never be regarded merely as examples of mechanical skill, as evidence of the operations of an Intelligence, as proofs of the existence of a God. They testify not only his existence, but his wisdom, his goodness, and his omnipotence; and should ever be studied with a direct and constant reference to Him. The naturalist who, in this humble and truth-seeking spirit, explores the world around him, will ever feel what the poet has expressed,

'These are THY glorious works, Parent of Good—
Almighty!'

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* As an illustration of this subject, we would refer to an essay by Schiller intitled 'The Philosopher and Trader in Science,' translated by Mrs. Austin, in a charming little volume just published, called 'Fragments of German Literature.'

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3. Moral and devotional effects. Under this head the elevating influence of a study of the works of creation is pointed out and enforced. The author well observes—

"But the mental effect is not limited to the production of a transient emotion of pleasure: it is the prelude of a long train of thought, and of the most grateful and reverential feeling towards the Great First Cause. The structural arrangements, admirable as they are, should never be regarded merely as examples of mechanical skill, as evidence of the operations of an Intelligence, as proofs of the existence of a God. They testify not only his existence, but his wisdom, his goodness, and his omnipotence; and should ever be studied with a direct and constant reference to Him. The naturalist who, in this humble and truth-seeking spirit, explores the world around him, will ever feel what the poet has expressed,

'These are THY glorious works, Parent of Good—
Almighty!'

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* As an illustration of this subject, we would refer to an essay by Schiller intitled 'The Philosopher and Trader in Science,' translated by Mrs. Austin, in a charming little volume just published, called 'Fragments of German Literature.'

"If viewed in this light, the actions of the inferior animals become elevated into so many manifestations of the Almighty Intelligence, from whom they derive their being. Hence Bonnet says, in a brief but happy metaphor, 'When I see an insect working at the construction of a nest or a cocoon, I am impressed with respect; because it seems to me that I am at a spectacle where the Supreme Artist is hid behind the curtain*.'"

4. Natural History as a branch of education. There can, we think, be little question of the desirableness of early instilling into the minds of the young a taste for those sciences which are capable of contributing so much to their happiness in mature years, and of thus rendering them useful members of society. Some may suppose that great difficulties exist in the way, on account of the want of teachers and books; but let the system be once adopted, and we believe that there will be no lack of those capable of teaching, or of books fitted for the use of the beginner. In botany and geology we have already a good supply of elementary works; and if we are not so well off in zoology, it is only because there has been at present no demand for such works.

The following remarks, although intended to apply to Irish institutions, may be adopted by many in England:—

"To raise Natural History to a higher rank and more prominent station in our Irish colleges would be most desirable. I believe a wish that such should be the case prevails in many influential quarters; and as that wish increases, it will find means and opportunity for its fitting expression. Meantime, I respectfully suggest that something might be done in our own province and in our own town, by directing public attention to the subject. Some of the proprietors of our Royal Academical Institution are sincerely desirous of seeing the course of education there revised and enlarged. Some learned and reverend members of the Presbyterian body are persuaded, that an increase of the term of study at present prescribed to their students would be highly desirable; and, also, that such a change should be accompanied by the introduction of new matter, and a revisal of that at present taught. This would seem, therefore, an auspicious time for bringing forward the views now submitted to your consideration. That a precedent may not be wanting for the change which I hope will in time be effected in the course of college education in Ireland, I may be permitted to refer to the University of London. Botany and Zoology form part of the matriculation examination; and in that for the degree of Bachelor of Arts, a comprehensive outline of Animal Physiology, Vegetable Physiology, and Structural Botany is prescribed."

It gave us pleasure to know, that recently, when the Senate of the University of London were requested by the heads of some College connected with it, to remit that part of their matriculation examination that referred to Natural History, they refused to do so. However little we should wish to see the study of the Classics or of Mathematics neglected, we are convinced that the study of Natural History bears too importantly on the welfare and happiness of mankind to be wisely excluded from the educational institutions of our country.

We conclude our notice with one more extract, referring our read-

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* 'Contemplation de la Nature.'

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> "If we look beyond the boundaries of Great Britain, and note the practice of our continental neighbours, we shall find it gives, in support of the course here recommended, the unanswerable testimony of *experience.* On this subject we have recently been put in possession of a well-arranged mass of information, in the Report by Professor Bache. This gentleman had been selected by the Trustees of the Girard College of Orphans, Philadelphia, to procure information with respect to the system of instruction pursued in similar establishments in Europe. For this purpose he visited England, Scotland, Ireland, France, Belgium, Holland, Switzerland, Italy, and the principal states of Germany. It was not until two years had been thus spent, and 278 schools of various kinds had been personally inspected, that Dr. Bache prepared his very valuable Report. From it we learn that, in the great majority of the continental schools, Natural History forms a regular part of the course of instruction, and usually occupies from two to four hours in the week. In some places it is connected with physical geography or with physics; in others it stands out as a distinct branch of education, and attention is given to its different departments in successive years. The entire Report gives unequivocal evidence of its good effects in awakening 'habits of observation and reflection;' and also of its being 'eminently calculated to promote early religious impressions.' It also states that the experience of the Prussian Gymnasia may be appealed to 'as proving the entire compatibility of such instruction, with an otherwise sound system; and the entire possibility of accomplishing it without neglecting other more important branches.'"

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

August 25, 1840.—W. H. Lloyd, Esq., in the Chair.

Specimens were exhibited of five new species of Kangaroo, forming part of the collection made by Mr. Gould, who had just returned from Australia, after an absence of two years and a half spent in the investigation of the habits and œconomy of the animals of that continent.

The first of these Kangaroos to which Mr. Gould drew attention was a large species, but little inferior in size to the *Macropus major*, inhabiting the summits of the mountain ranges in the interior of New South Wales. Mr. Gould observed, that it is a most powerful animal, and very dangerous to approach. The unusual strength and size of the limbs suggested the specific name of *robustus*, and Mr. Gould accordingly characterized it as

MACROPUS (PETROGALE*) ROBUSTUS. *Macr. artubus anticis magnis et prærobustis; vellere e fusco cinereo, apud partes inferiores pallidiore; tarsis fuscis; digitis anticè nigris; antipedibus, et carpis, nigris; capite fuliginoso levitèr tincto; utrâque genâ lineâ albescente notatâ; gulâ, guttureque albidis; caudâ supernè fuscâ, subtùs pallidiore.*

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